Nondestructive Evaluation Program

Tunable Laser Development for In-flight OFDR Structural Health Monitoring Systems

Completed Technology Project (2011 - 2013)

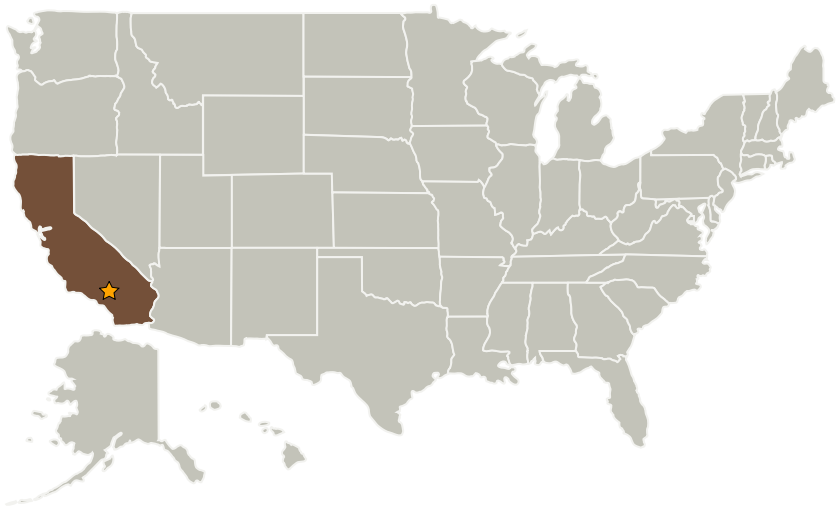
Project Introduction

Development of a cost-effective, robust, tunable, miniaturized, ruggedized, and flight tested swept laser for in-flight structural health monitoring, based on the NASA-patented optical frequency domain reflectrometry (OFDR) detection scheme. The objective of this effort is to research and develop a NASA flight certified tunable swept laser system that is comparable to the performance of currently-deployed swept lasers but are lower cost, lighter weight, lower volume, and are flight-ruggedized for vehicle health monitoring applications.

Anticipated Benefits

Cost-effective, robust, tunable, miniaturized, ruggedized, and flight tested in-flight structural health monitoring.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California

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Primary U.S. Work Locations
California

Organizational Responsibility

Responsible Mission Directorate:

Office of Safety and Mission Assurance (OSMA)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Nondestructive Evaluation Program

Project Management

Program Director:

Terrence W Wilcutt

Program Managers:

Jeannette F Plante
Jason P Moore
Eric R Burke

Project Manager:

Allen R Parker

Principal Investigator:

Allen R Parker

Co-Investigator:

Hon M Chan

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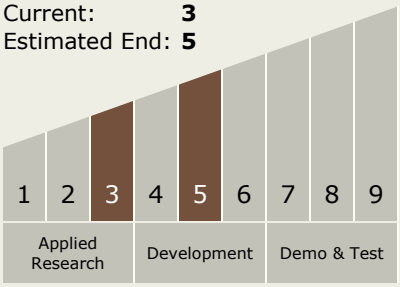
Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **5**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.4 Environment Sensors